

Call for Papers for the Special Session on
Z-Source Converters: Topologies, Modulation and Control Strategies, and their Applications

Organized and co-chaired by

Prof. Ebrahim Babaei, University of Tabriz, Iran

e-babaei@tabrizu.ac.ir

Prof. Hasan Komurcugil, Eastern Mediterranean University,
North Cyprus, Turkey

hasan.komurcugil@emu.edu.tr

Technical Outline of the Session and Topics

Impedance Source (Z-source) converters provide an efficient and versatile means for electric power conversion (dc–dc, dc–ac, ac–dc, ac–ac) across a wide range of applications. Over the past 20 years, research and practical applications of Z-source converters have seen continuous growth. These research efforts have led to the rapid development of various Z-source converter topologies, modulation techniques, and control strategies.

Despite these advances, many important aspects—such as efficiency improvement, parameter optimization, and exploration of new applications—still require further investigation. We invite all researchers working in this area to submit their original contributions to this Special Session.

Topics of the session include, but are not limited to:

- *Development of new Z-source converter topologies*
- *Impedance-based converters, including dc–dc, dc–ac, ac–dc, matrix, and multilevel converters*
- *New modulation and control strategies for Z-source converters*
- *Industrial applications of Z-source converters*
- *Renewable energy applications of Z-source converters*
- *Applications in electric vehicles and motor drives*
- *Parameter optimization and performance enhancement*
- *Design considerations for power and control stages*
- *Loss analysis and methods for loss minimization*
- *Reliability issues and robust operation*
- *Reviews, challenges, and future directions in Z-source converter research*

Timeline for Authors

All the instructions for paper submission are available on the conference website. Please visit www.iecon2026.org or scan the QR code for the timeline.

